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2 What is claimed is:

3 1. An improved propellor puller device for pulling a propellor having blades from
4 the propellor shaft of a marine engine, comprising:

5 (a) a hub base member having an upper end and a lower end, a central axis,
6 and an axially extending bore therethrough;

7 (b) a bolt having a first end and a second end adapted for carriage by said hub
8 base member within said bore in translational relationship such that upon rotation of said bolt
9 said hub base member is displaced axially relative to said bolt;

10 (c) a live center member carried by said bolt adjacent said first end for
11 compressive engagement with said propellor shaft upon sufficient rotation of said bolt and where
12 said live center member is so adapted for carriage by said bolt to permit rotation of said bolt
13 relative to said live center member when said live center member is in fixed rotational
14 relationship relative to said propellor shaft;

15 (d) a multiplicity of puller arms carried in fixed relationship with said hub
16 base member intermediate said upper end and lower end of said hub base member and extending
17 radially therefrom;

18 (e) a plurality of flexible tension members where each said flexible tension
19 member is associated with one of said multiplicity of puller arms and one of said propellor
20 blades, respectively, for transmitting axially directed external forces to said propellor blades
21 upon sufficient rotation of said bolt; and

22 (f) a torque handle extending radially from said hub base member for
23 applying a sufficient torque to said hub base member to preclude rotation of said hub base
24 member upon rotation of said bolt.

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26 2 The improved propellor puller device recited in Claim 1 wherein said bolt has an
27 axially extending internal cylindrical recess having a boundary surface at said first end, and
28 where said live center member further comprises a conical head portion for compressive
29 engagement with said propellor shaft and a cylindrical shaft portion integral with said conical
30 head portion, where said cylindrical shaft portion and said internal cylindrical recess are so

1 dimensioned and proportioned to permit said cylindrical shaft portion to be captively held within
2 said internal cylindrical recess.
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4 3. The improved propellor puller device recited in Claim 2 wherein said cylindrical shaft
5 portion of said live center member has a cylindrical outer surface having a diameter less than the
6 diameter of said internal cylindrical recess of said bolt and where said cylindrical outer surface
7 of said cylindrical shaft portion has a circumferential slot, said internal cylindrical recess having
8 a continuous circumferentially extending groove in said boundary surface.
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10 4. The improved propellor puller device recited in Claim 3 wherein said live center
11 member further comprises a resilient split ring carried in said circumferential slot such that said
12 resilient split ring may expand radially into said groove to preclude axial displacement of said
13 live center member relative to said bolt.
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15 5. The improved propellor puller device recited in Claim 1 where each said puller arm
16 has a smooth upper surface inclined to said central axis and where each said flexible tension
17 member is carried in slidable relationship with a respective one of said puller arms.
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19 6. The improved propellor puller device recited in Claim 1 where said flexible tension
20 members comprise a plurality of rigid linking members forming a chain where at least one of
21 said linking members is so dimensioned and proportioned to permit said linking member to
22 telescopically engage one of said puller arms.
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24 7. The improved propellor puller device recited in Claim 6 where each said flexible
25 tension member further comprises a hook carried by one of said chain linking members for
26 engagement with a said propellor blade to permit the transmission of a pulling force to said
27 propellor blade.
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1 8. A propellor puller device for pulling a propellor having blades from the propellor shaft
2 of a marine engine comprising in combination:

3 (a) a hub base member having an upper end and a lower end, a central axis, and an axially
4 extending bore therethrough, said hub member further having a multiplicity of puller arms
5 carried in fixed relationship with said hub base member intermediate said upper end and lower
6 end of said hub base member and extending radially therefrom, said hub base member further
7 having a torque handle extending radially from said hub base member;

8 (b) a bolt having a first end and a second end adapted for carriage by said hub base
9 member within said bore in translational relationship such that upon rotation of said bolt said hub
10 base member is displaced axially relative to said bolt; and

11 (c) a live center member carried by said bolt adjacent said first end for compressive
12 engagement with said propellor shaft upon sufficient rotation of said bolt and where said live
13 center member is so adapted for carriage by said bolt to permit rotation of said bolt relative to
14 said live center member when said live center member is in fixed rotational relationship relative
15 to said propellor shaft.

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17 9. The combination recited in Claim 8 where said bolt has an axially extending internal
18 cylindrical recess having a boundary surface at said first end, and where said live center member
19 further comprises a conical head portion for compressive engagement with said propellor shaft
20 and a cylindrical shaft portion integral with said conical head portion, where said cylindrical
21 shaft portion and said internal cylindrical recess are so dimensioned and proportioned to permit
22 said cylindrical shaft portion to be captively held within said internal cylindrical recess.

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24 10. The combination recited in Claim 9 where said cylindrical shaft portion of said live
25 center member has a cylindrical outer surface having a diameter less than the diameter of said
26 internal cylindrical recess of said bolt and where said cylindrical outer surface of said cylindrical
27 shaft portion has a circumferential slot, said internal cylindrical recess having a continuous
28 circumferentially extending groove in said boundary surface.

1 11. The combination recited in Claim 9 where said live center member further comprises
2 a resilient split ring carried in said circumferential slot such that said resilient split ring may
3 expand radially into said groove to preclude axial displacement of said live center member
4 relative to said bolt.

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6 12. The combination recited in Claim 8 further comprising in combination a plurality of
7 flexible tension members where each said flexible tension member is associated with one of said
8 multiplicity of puller arms and one of said propellor blades, respectively, for transmitting axially
9 directed external forces to said propellor blades upon sufficient rotation of said bolt.

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11 13. The combination recited in Claim 12 where each said puller arm has a smooth upper
12 surface inclined to said central axis and where each said flexible tension member is carried in
13 slidable relationship with a respective one of said puller arms.

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15 14. The combination recited in Claim 13 where said flexible tension members comprise a
16 plurality of rigid linking members forming a chain where at least one of said linking members is
17 so dimensioned and proportioned to permit said linking member to telescopically engage one of
18 said puller arms.

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20 15. The combination recited in Claim 13 where each said flexible tension member further
21 comprises a hook carried by one of said chain linking members for engagement with a said
22 propellor blade to permit the transmission of a pulling force to said propellor blade.